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REPORT ON PROCEEDINGS UNDER

THE PRAIRIE FARM REHABILITATION ACT

FOR THE FISCAL YEAR ENDING

March 31, 1938.

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REPORT ON PROCEEDINGS UNDER

THE PRAIRIE FARM REHABILITATION ACT

FOR THE FISCAL YEAR ENDING MARCH 31st, 1938

FOREWORD

This report deals primarily with the work conducted under the Prairie Farm Rehabilitation Act during the fiscal year 1937-38. Some account is given of the work done in preceding years, however, in order to give a comprehensive outline of the rehabilitation program.

THE PRAIRIE FARM REHABILITATION ACT

The Act

The Prairie Farm Rehabilitation Act (25-26 George V, C. 23) was passed by the Parliament of Canada in April, 1935, "to provide for the rehabilitation of drought and soil drifting areas in the provinces of Manitoba, Saskatchewan, and Alberta." Under the terms of this Act measures have been introduced throughout the affected areas to promote those "systems of farm practice, tree culture, and water supply that will afford greater economic security" to the agricultural population. By an amendment to the Act in March, 1937 (1 George VI, C. 14) "land utilization" and "land settlement" were included as additional objectives.

Administration

Administration of the Act is vested in the Federal Minister of Agriculture, who is assisted by such advisory committees as may be deemed necessary for the most effective development of the rehabilitation program. Organization and supervision of the work is performed by the Dominion Experimental Farms and the staff of the Prairie Farm Rehabilitation Office at Regina, Sask.

Appropriations and Expenditures

Appropriations for work under the Act have amounted to $1,250,000.00 for the fiscal year 1935-36, $1,184,420.69 for 1936-37, and $2,000,000.00 for 1937-38. Expenditures for the corresponding periods have been $411,515.52 in 1935-36; $959,818.78 in 1936-37; and $1,700,000.00 in 1937-38. A statement of expenditures by major projects for the fiscal year 1937-38, is presented as Appendix 1 of this report.

Area under the Act

The area coming under the provisions of the Prairie Farm Rehabilitation Act extends along the International Boundary from the Red River in Manitoba to the Rocky Mountains, and as far north as Brandon in Manitoba, the Qu'Appelle River in eastern Saskatchewan, Battleford in western Saskatchewan, Wainwright in eastern Alberta, and about 25 miles north of Calgary in western Alberta.

Within the foregoing area, which covers about one-fifth of the three Prairie Provinces, are located over 122,000 farms, supporting a farm population of 536,000 persons. Occupied land in the same area amounts to 66,223,000 acres, of which about 39,000,000 acres are cultivated. More complete statistics of land acreages, farm population, and number of farms are presented by provinces in Appendix 2.

The Need for Rehabilitation

The need for agricultural rehabilitation in the Prairie Provinces arose from the conditions of severe drought and soil drifting which have been experienced almost continuously since 1929 in southwestern Manitoba and the southern parts of Saskatchewan and Alberta. These conditions have resulted in heavy reductions in crop yields throughout the affected area, and in widespread and repeated crop failures. The magnitude of the problem presented by drought is indicated by the fact that over 122,000 farms, comprising over 66,000,000 acres of occupied land, or 60 per cent of the total occupied farm land in the Prairie Provinces, have been brought under the operation of the Prairie Farm Rehabilitation Act as suffering from drought. Over much of this area the average crop yield during the past nine years has fallen to less than bare subsistence levels.

The economic losses caused by drought were further increased, during the years 1930 to 1935, by the very low prices paid for farm produce. During these six years the average farm price of wheat in the Prairie Provinces was only 48 cents per bushel as compared with $1.03 per bushel for the preceding six years. The resulting shrinkage in farm income has caused much suffering and destitution, entailing large governmental expenditure for relief. Furthermore, the prolonged period during which these adverse conditions have been experienced has made it difficult for farmers to rehabilitate themselves.

Inasmuch as the reduced purchasing power of farmers in the drought areas has reacted unfavourably on the commercial and industrial life of the entire country, the problem of rehabilitation is one of national importance. The inauguration of the Prairie Farm Rehabilitation program by the Federal Government was in recognition of this fact.

The Rehabilitation Program

The principal object of the rehabilitation program is to enable farmers throughout the drought area to remedy the effects of drought and soil drifting, and to effect such improvements in farm practices and land use as will afford the greatest possible degree of security to prairie agriculture against future droughts or other crises. An essential feature of this program is the encouragement and assistance given to farmers to solve their own drought and soil drifting problems by co-operative community action, with a minimum of material and financial aid from governmental sources. For this reason the cultural side of the rehabilitation program is largely demonstrational and fact finding, with the object of supplying guidance for the readjustment of agriculture, rather than to provide assistance in bridging temporary difficulties.

With the foregoing general objects in view, measures have been introduced throughout the drought and soil drifting areas to ensure the most economical utilization of the limited supply of soil moisture for crop production, to prevent soil drifting, and to reclaim abandoned farm land for its most suitable use in either crop production or grazing. This phase of the program is being accomplished by the Dominion Experimental Farms through demonstrational and investigational work on District Experiment Sub-Stations and Reclamation Stations, while the interest and co-operation of farmers is being secured through Agricultural Improvement Associations. The value of drought resistant, soil-binding grasses for reclamation and soil drifting control is being demonstrated through numerous regrassing projects. These projects are especially timely in connection with the provincial land utilization policies of Saskatchewan and Alberta. Tree planting as a drought and soil drifting control measure is being promoted on a large scale for both demonstrational and experimental purposes.

Latterly, land utilization studies based on economic land ownership, and soil surveys, have been undertaken with a view to establishing a better relationship between farming practices and soil conditions. A practical development of these studies is the establishment of community pastures on areas of sub-marginal land which have been at some time unsuccessfully cultivated. The permanent removal of these lands from cultivation and their use for grazing under government control will effect desirable improvements in land utilization. A similar measure consists of designating large areas of marginal land as reserve pastures, in which ranching rather than grain farming will be promoted.

A major phase of the program is the development of surface water resources, with a view to securing the most effective utilization of the limited water supplies for irrigation, stockwatering, and domestic farm purposes.

In connection with the entire program a large amount of research is in progress.

THE PROGRESS OF REHABILITATION DURING THE FISCAL YEAR 1937-38

The following account of rehabilitation activities during the year 1937-38 is divided into three sections under the general headings: (1) Cultural; (2) Land Utilization; and (3) Water Development. The various measures and agencies employed in the work are somewhat fully described for explanatory reasons. The reports on these activities are prefaced by a brief reference to climatic and crop conditions in the Prairie Provinces during 1937.

Climatic and Crop Conditions in the Prairie Provinces during 1937

Climatic conditions during the past year were extremely unfavourable for crop production throughout nearly all of Saskatchewan and the east-central portion of Alberta. In these districts the combined effects of low soil moisture reserves in the spring and extremely dry weather during April, May and June, resulted in widespread partial or complete crop failures. The area affected by severe drought extended from the Manitoba-Saskatchewan boundary to the centre of Alberta, and from the International Boundary to as far north as Battleford, Sask. In the central portion of this area complete crop failure was experienced. The conditions are reflected in the following estimates of wheat yield in the Prairie Provinces during 1937, as compared with the preceding 27 years.

Average Yield of Wheat per Acre

Prairie Provinces of Canada

Period	Manitoba	Saskatchewan	Alberta
	bu.	bu.	bu.
1937	16.7	2.7	9.4
1910 to 1936 inclusive	16.0	14.9	17.7

Data published by Dominion Bureau of Statistics

From the foregoing data it will be observed that the depressing crop conditions in the Prairie Provinces during 1937 were somewhat relieved by the excellent yields of wheat secured in Manitoba. Fairly good yields were also secured in some parts of Alberta. In Saskatchewan, however, the 1937 crop was practically a total failure.

CULTURAL PHASES OF THE REHABILITATION PROGRAM

Dominion Experimental Farms

The cultural phases of the rehabilitation program are supervised by the Director of the Dominion Experimental Farms, largely through the facilities of the various farms and stations located in the drought area. These include the experimental farms at Brandon, southwestern Manitoba; at Indian Head, southeastern Saskatchewan; at Swift Current, southwestern Saskatchewan; Scott, central Saskatchewan; and Lethbridge, southern Alberta. From these centres is conducted the detailed supervision of cultural rehabilitation work in the surrounding territory.

District Experiment Sub-Stations

District Experiment Sub-Stations are the principal agencies through which the investigational and demonstrational facilities of the Dominion Experimental Farms are being utilized for the improvement of agricultural conditions in the drought and soil drifting areas. Comprising usually about 640 acres of land each, these sub-stations are private farms which are operated under government supervision for the demonstration and further trial of the best known methods of crop production in districts subject to drought and soil drifting. One noteworthy feature of this work is that the average sub-station has no advantages in land or equipment over many other farms in the district, and is therefore free from the objection often attached to the larger experimental farms that the measures employed are beyond the resources of the ordinary farmer. Moreover, as there are some 47 sub-stations located at strategic points throughout the drought area, they cover a very wide range of soil and weather conditions, a factor of great importance in experimental work.

The location by general districts of the 47 sub-stations in operation on March 31, 1938, is shown on the following list. The sub-stations at Boissevain and Crystal City, Manitoba, were established during the past fiscal year, while the sub-station at Youngstown, Alberta, shown on previous lists, was closed.

DISTRICT EXPERIMENT SUB-STATIONS OPERATING UNDER THE PRAIRIE FARM REHABILITATION ACT AS OF MARCH 31st, 1938

Southwestern Manitoba supervised from Dominion Experimental Farm, Brandon.

Boissevain	Goodlands	
Crystal City	Lyleton	Pipestone

Southeastern Saskatchewan Supervised from Dominion Experimental Farm, Indian Head, Saskatchewan.

Alameda	Davidson	Strasbourg
Avonlea	Kisby	Weyburn
Craik	Radville	

Southwestern Saskatchewan Supervised from Dominion Experimental Station, Swift Current, Sask.

Canuck	Limerick	Tompkins
Carmichael	Lisieux	Tugaske
Fox Valley	Parkbeg	Valjean
Gravelbourg	Piapot	Willowbunch
Herbert	Riverhurst	
Kincaid	Shaunavon	

Central Saskatchewan and East Central Alberta Supervised from Dominion Experimental Station, Scott, Sask.

Consort, Alta.	Juniata, Sask.	Metiskow, Alta.
Dunblane, Sask.	Kindersley, Sask.	Rosetown, Sask.
Guernsey, Sask.	Loverna, Sask.	

Southern Alberta Supervised from Dominion Experimental Station, Lethbridge, Alta.

Bindloss	Drumheller	Whitla
Castor	Foremost	
Cessford	Lomond	Pincher Creek
Claresholm	Rockyford	

In view of the fact that conditions on the District Experiment Sub-Stations are typical of the drought and soil drifting area as a whole, and the remedial and preventive measures being adopted on these stations are of general application, the following description of sub-station operations is representative of the improvements in crop production being introduced under the rehabilitation program.

Cropping Practices

The principal limiting factor governing crop production in drought areas is the lack of sufficient soil moisture, which is sometimes totally inadequate for economical crop production. This condition profoundly affects cropping practices, limiting the choice of crops to the relatively drought-resistant grains, principally wheat, and requiring special measures to effect the optimum utilization of the available soil moisture. For this reason, a two-year rotation of summer-fallow and grain is uniformly practised on all District Experiment Sub-Stations, moisture being stored in the soil during the fallow years to supplement rainfall deficiencies during the alternate crop years. On some sub-stations a three-year rotation of summer-fallow, grain, grain is also followed for comparison with the two-year rotation. An important function of the summer-fallow is to destroy weeds which would otherwise utilize the scanty soil moisture supplies to the detriment of the grain crops.

Soil Drifting Control

During recent dry years soil drifting has resulted in severe and permanent damage to extensive areas of soil throughout the southern parts of the Prairie Provinces. This tendency to drifting arising from the action of high winds on soil which is relatively poor in plant fibre, is increased by the necessary practice of summer-fallowing which exposes the soil without vegetative protection, and in a more or less pulverized condition. Under conditions of severe drifting, the surface soil is blown into drifts, thereby interfering gravely with the tillage operations, and leaving areas of the subsoil exposed, with a serious reduction in fertility. As soil drifting has assumed unprecedented proportions during recent years, several measures of control including strip farming, cultural practices and cover crops are being tested and demonstrated on the District Experiment Sub-Stations.

Strip farming is a method of reducing drifting on fallow land to a minimum by alternating long, narrow strips of summer-fallow with similar strips of growing crops. These strips, ranging in width from 4 to 16 rods, are run at right angles to the prevailing strong winds. Drifting which may occur on the fallow strips is checked by the alternate crop or stubble strips, thereby limiting the damage to a confined area.

Strip farming has proved very effective in checking soil drifting in some localities, particularly in southern Alberta. For this reason, part of the grain on each sub-station is grown in strips, with the object of introducing this practice in districts where it has not been previously tried. In many districts throughout Saskatchewan and Alberta strip farming was first practised on the local sub-stations. At Avonlea, strip farming was adopted on the local illustration station in 1932, and was already well established when this station was enlarged into a sub-station in 1935.

Cultural practices in the preparation of land for seed, especially on fallow, have considerable influence on the readiness with which soil drifts. Experience has shown that drifting on cultivated land is less likely to occur where a good "trash" cover of stubble and dead weeds is retained on the surface, than where this material is completely buried. Good trash cover is maintained by shallow cultivation including the "ploughless" fallow in which the seed bed is prepared without ploughing.

Cultivation which leaves the surface in a rough, cloddy condition is a useful control measure, which has given very promising results on the sub-stations. Under conditions of emergency, drifting may be checked by ploughing furrows at about two-rod intervals across the affected area at right angles to the direction of drifting, or by using the duckfoot cultivator or lister in a similar manner.

On each District Experiment Sub-Station various cultural practices are being compared with a view to determining those which are most suitable to control drifting under local conditions.

Cover crops of fall sown spring grain are being used on part of the summer-fallow land on each sub-station to prevent fall and spring drifting. This practice may be followed in conjunction with strip farming or on large fields. As cover crops are usually sown about the first of August they do not make sufficient growth before freeze-up to greatly reduce the moisture conserved during the previous period of bare fallow. Where rainfall is sufficient to produce fair growth, cover crops may prevent soil drifting, provide some grazing and retain a snow cover against winter winds.

In some cases drifting on fallow land may be controlled by growing corn in single rows at about two-rod intervals or by drill-width strips of hemp at about four-rod intervals, the seeding being done at right angles to the prevailing strong winds. A combination of strip farming, together with the use of surface cultivation to maintain a trash cover, has proved quite effective in the control of soil drifting.

Farmstead Improvement

On all District Experiment Sub-Stations certain measures are undertaken to improve living conditions around the farm home. These measures include the establishment of farm home shelterbelts of trees and hedges, for the protection of buildings and home surroundings against high winds and drifting soil. Provision is also made for farm gardens; poultry flocks are established or improved, and efforts are made to maintain some live stock. One result of these measures is to provide a supply of foodstuffs for domestic use, which tends to offset the hardships caused in periods of low field crop production.

Grass and Clovers for Hay and Pasture

On sub-stations where conditions are favourable to the production of hay or pasture, efforts are made to establish stands of desirable grasses or clovers. Preference in this work is given to relatively drought resistant species, notably crested wheat grass, brome grass, and sweet clover. In some areas alfalfa is grown on low land. One result of this work will be to determine the most suitable grasses or clovers for various districts, as well as the economic feasibility of cultivated hay or pasture seedings.

Work on the District Experiment Sub-Stations during 1937

Sub-Station Work in Southwestern Manitoba - Crop conditions on the sub-stations in this district were much more satisfactory than they have been for a number of years. Precipitation during the summer months was relatively high, rainfall at Brandon, for instance, being 13.85 inches during the months of April to July inclusive as compared with the 42-year average of 9.14 inches. This condition had a beneficial effect on all types of crop. An incidental result of the high precipitation was that many summer-fallow fields which were under the "ploughless fallow" for some years, had to be ploughed during the past season to keep down weed growth.

On the new sub-station which was opened at Boissevain, a comprehensive series of experiments has been planned to test the value of terracing, contour furrowing, and strip cropping for conserving moisture by retaining run-off water from melting snow and heavy showers.

As a result of the strip farming demonstrations conducted on the sub-stations, many farmers in southwestern Manitoba are adopting this method of soil drifting control, particularly in the vicinity of Lyleton.

Sub-Station Work in Southeastern Saskatchewan - Very severe conditions of drought were experienced throughout this district. Seven District Experiment Sub-Stations are located in this area, and on four of these, - Avonlea, Lisieux, Weyburn, and Willowbunch, spring sown crops failed to germinate. At Alameda and Radville, yields of wheat in the neighbourhood of one to two bushels per acre were secured. At Strasbourg from 4 to 9 bushels per acre of wheat were harvested.

The failure of seed to germinate on many fields in this district made it advisable to change the procedure in strip farming. Stubble strips, which ordinarily would have been summer-fallowed in 1937, were left uncultivated under stubble and weed cover, while the seeded strips were treated as summer-fallow. In this manner, the essential feature of strip farming for soil drifting control was retained.

Rainfall conditions in the fall of 1937 did not favour the sowing of cover crops on the sub-stations in southeastern Saskatchewan. Fall rains in September came too late for this purpose. Cover crops sown at Willowbunch, Lisieux, Avonlea and Aylesbury practically failed to germinate. No seedings of cover crops were made at Weyburn, Alameda, Arcola, and Strasbourg. At Radville a thin cover was secured.

Sub-Station Work in Southwestern Saskatchewan - Of the 15 sub-stations located in southwestern Saskatchewan, only 4 secured yields of wheat, and on none of these four stations did the field yield exceed 3.5 bushels per acre.

As in southeastern Saskatchewan, the failure of crops to make appreciable growth during the past season created difficulties with strip farming procedure. In spite of rather poor growth on the crop strips, however, it was evident that strip farming had the effect of checking soil drifting.

During the year a small irrigation project was constructed on the sub-station at Canuck, for the production under irrigation of garden and fodder crops. The beneficial effect of this project as regards garden produce was especially noticeable during the past dry season.

On ten sub-stations in this district tests of the basin lister for moisture conservation are in progress.

Sub-Station Work in Central Saskatchewan & East Central Alberta - Eight sub-stations are located in this area. During the past season drought resulted in a total crop failure at Dunblane, Juniata, Loverna, and Kindersley, all in Saskatchewan, and in greatly reduced yield at Guernsey and Rosetown, Saskatchewan, and Consort, Alberta. Late July rains resulted in fair crop yields at Metiskow.

Soil drifting control investigations on the sub-stations in this district have indicated that strip farming alone is not sufficient to stop drifting, but in combination with surface cultivation which preserves a good trash cover, has proved quite effective.

One of the major objections to strip farming is that it increases wheat-stem sawfly infestation. At Consort, Alberta, infestations of this insect have increased under strip farming. The sawflies worked from the borders toward the centre of a sixteen rod strip until the strip was entirely infested, while in the large fields only the outer border was infested.

Sub-Station Work in Southern Alberta - Most of the ten sub-stations located in this district suffered from drought. At Pincher Creek and Claresholm which lie beyond the 1937 drought area, good crops were secured.

RECLAMATION

Reclamation work under the Prairie Farm Rehabilitation Act has two main objectives, as follows:

1. To re-establish crop production on land which has been abandoned due to drought, soil drifting, or unsuitable cultural practices. Projects in which this is the main objective are referred to as reclamation projects. Work of this nature is in the main of an investigational nature.

2. To re-establish grass cover on land which is demonstrably unfit for crop production by reason of inadequate precipitation or great susceptibility to drifting. Projects with this main objective are regrassing projects.

RECLAMATION PROJECTS

Melita Reclamation Station, Manitoba.

An extensive series of experiments on the reclamation of crop land which had been subjected to severe drifting was started late in 1935 on two sections of light land near Melita, Man. During 1937, therefore, the second full crop season's work was completed. Since the establishment of this station considerable progress has been made in

remedying the effects of soil drifting, and in checking its recurrence. The methods employed have included various adaptations of strip farming, different cultural practices, and such emergency practices as spreading straw, dried weeds, and refuse hay on focal points of drifting.

Work on establishing grasses and clovers by various methods on land particularly susceptible to drifting has been started. This regrassing program covers comparisons of different species, of different methods of seeding down, and of various rotations which include hay or pasture crops. Other investigations on this station include fertilizer tests on eroded land, and the establishment of field crop shelterbelts.

During the past year, by reason of the favourable climatic conditions experienced in Manitoba, considerable progress was made in various experimental lines of work, especially as regards the establishment of strip farming and the incorporation of plant fibre in the soil. Experimental results, while as yet necessarily inconclusive, have been both interesting and suggestive. During 1937, for instance, it was demonstrated that yields of economic proportions could be secured in this district under conditions of soil drifting which might formerly have caused partial crop failures. This satisfactory result was secured through strip farming and improved cultural practices.

Another interesting result is connected with land-levelling operations. On various areas of this station, drifting soil had formed irregular mounds about four feet high, and a considerable amount of preliminary levelling work with special equipment was expected in order to facilitate normal cultural operations. It has been found, however, that tillage with ordinary implements, together with wind and rain action, has produced a remarkable levelling effect on this land, thereby simplifying reclamation procedure.

Work on this station is supervised from the Dominion Experimental Farm at Brandon, Man.

Reclamation Projects in Southeastern Saskatchewan.

Several reclamation projects have been in progress in this district with the object of stopping soil drifting on sub-marginal areas which are endangering nearly good land. In 1936 fall rye was sown as a cover crop on 950 acres of drifting land about 14 miles west of Aylesbury. During 1937 some 670 acres of this area were harvested, with a total yield of 3995 bushels. Where the fall rye had failed to grow, Russian thistles had established a good cover. The combination of rye stubble and weeds will provide good soil binding cover for regrassing operations for the permanent control of drifting. A similar project for the reclamation of about 180 acres was started in 1937 about 3 miles south of Craik.

In the area southeast of Estevan reclamation work was started in the fall of 1937 on a number of focal points of drifting, amounting in the aggregate to about 4,000 acres. On some of these areas, 8-rod strips were sown with fall rye in alternation with 4-rod strips which were cultivated with a basin lister. The purpose of the listed strip is to provide temporary control of drifting until the rye may make sufficient growth to hold the soil.

Reclamation Projects in Southwestern Saskatchewan.

At Mortlach, Sask., a Reclamation Station, somewhat similar to the Melita project, was established in 1936. Adverse weather conditions

during the past two years have hampered work at Mortlach, but some progress has been made in controlling drifting. During the fall of 1937 the drifting area on this station had been reduced to about 60 per cent of its original size, in spite of very adverse conditions. Similar reclamation projects have been started at Cadillac, Sask., and Woodrow, Sask., on severely drifted areas.

Soil drifting has been so severe and persistent on several areas in southwestern Saskatchewan, that their reclamation is beyond the resources of local farmers. To overcome this condition, high powered equipment for cultivation and seeding is being supplied from the Dominion Experimental Station at Swift Current, Sask. The chief value of this equipment is that it supplements to a marked degree the efforts of local farmers in taking full advantage of somewhat infrequent periods of favourable weather for reclamation work.

Reclamation Work in Southern Alberta.

A program of reclamation work, largely on territory under the Special Municipal Areas Board of Alberta has been initiated from the Dominion Experimental Station at Lethbridge, Alta. The establishment of cover on a number of focal points of drifting, aggregating some 12,000 acres, was contemplated, the work to extend over a period of three years. Cultivating and seeding operations were conducted on about 4,000 acres of this land in 1937. The extreme drought of last summer has greatly intensified the need of this work.

REGRASSING PROJECTS

In Manitoba and Southeastern Saskatchewan the use of grass to add fibre to the soil is an important phase of reclamation work. In the remainder of the drought area, considerable attention is given to regrassing demonstrations, where the object is to improve grazing conditions as well as prevent soil drifting.

Regrassing in Southwestern Saskatchewan.

In addition to the regrassing work on the Reclamation Stations in this district, some work has been done with co-operative regrassing demonstrations and experiments on abandoned land, low lying areas, spring flooded areas and irrigation projects. Thirteen co-operators have received grass seed for the seeding down of abandoned, weedy land. Seed of suitable grasses and legumes was supplied for use on 10 acres of low land which is occasionally moist. Seeding with various forage crops also has been done on areas spring flooded by dams or dykes, and on two small irrigation projects.

At the Mortlach Reclamation Station some 300 acres of weedy land were seeded down with grasses or legumes in a large scale test of different varieties. About 500 acres at Cadillac have been similarly treated. Extensive regrassing work is also in progress on certain areas in the Val Marie Irrigation Project.

Regrassing in West Central Saskatchewan & East-Central Alberta.

Regrassing demonstrations are in progress at 25 points in this district, which lies north of the South Saskatchewan river in Saskatchewan and north of Sounding Creek in Alberta. These demonstrations cover only a few acres at each point, but embody certain comparisons of species, usually crested wheat grass and brome grass, and of methods and dates of seeding, which will result in useful information on regrassing work.

Certain interesting results were secured during 1937. Under the prevailing conditions, the most successful results were obtained by drilling crested wheat grass in early September where rains moistened the soil. This proved superior to seeding in the same fields with the same grass in late fall or early spring. Seeding brome grass in September, however, did not prove a satisfactory method. Broadcasting grass seed, as compared with drilling, proved a failure.

Regrassing in Southern Alberta.

In the district of Alberta lying between Medicine Hat in the south and Sullivan and Sounding lakes in the north, a considerable percentage of the land has been abandoned by farmers on account of insufficient precipitation. As a result of this abandonment the land is either covered with weeds or subject to soil drifting. In order to remedy this condition by re-establishing grass for grazing purposes, regrassing reclamation projects were started in 1935 at the following points: Naco, Sounding Creek Area; Stanmore, North Berry Creek Area; Cessford, South Berry Creek Area; Hutton; and Bowell Tilley East Area. During 1936 additional projects were started in the Sullivan Lake Area, and at Youngstown. The acreage involved in these projects varies from 160 to 600 acres. In each of these projects different methods of seeding down grass, principally crested wheat grass, are under investigation. These methods include broadcasting and drilling seed, with and without cultural preparation, at different times in the year. From the results so far secured it would seem that late fall seeding of grasses just before freeze-up is preferable to spring or summer seeding. Regrassing reclamation work in southern Alberta is supervised from the Dominion Experimental Station at Lethbridge, Alberta.

Seed Supplies for Reclamation and Regrassing

During the fiscal year 1937-38 supplies of grass, legume, and cereal seeds for the various reclamation, and regrassing projects, as well as for distribution to Agricultural Improvement Associations, was secured through the Dominion Seed Branch. Total purchases for this purpose are given below.

Seed Purchased for Rehabilitation Projects

Fiscal year 1937-38

Grasses	Pounds
Crested wheat grass	170,761
Brome grass	38,219
Mixed brome and western rye grass	12,500
Western rye grass	3,500
Reed canary grass	150
Legumes	
Alfalfa	30,250
Sweet clover	47,150
Total	302,530

Cereals	Bushels
Oats	10,221
Fall rye	2,571
Corn	187
Millet	146
Total	13,125

The total amount of grass and legume seed purchased since the inauguration of the program for distribution to rehabilitation projects amounted by March 31, 1938 to 619,271 pounds. This quantity included 330,281 pounds of crested wheat grass, 83,340 pounds of brome grass, 13,690 pounds of western rye grass, 56,810 pounds of alfalfa, and 109,200 pounds of sweet clover.

AGRICULTURAL IMPROVEMENT ASSOCIATIONS

For the purpose of informing farmers of the aims and objects of the Prairie Farm Rehabilitation Program, and of encouraging co-operative community action on drought and soil drifting problems, Agricultural Improvement Associations have been organized among farmers at a number of points throughout the drought area. The essential characteristic of these Associations is that members agree to adopt as uniformly as practicable such measures for drought and soil drifting control as seem suitable under local conditions. In this manner the effectiveness of these control measures is greatly increased as compared with the uncoordinated efforts of individual farmers. For this reason special assistance is offered members of Associations to enable them to adopt certain rehabilitation measures on their farms.

Assistance for Agricultural Improvement Associations

The following assistance for Agricultural Improvement Associations is provided by the federal government:

1. Advice and assistance in organization by Superintendents of Dominion Experimental Farms, and by Supervisors appointed for Association work.

2. Actual practical farm to farm advice and assistance to members of the Associations in adopting rehabilitation measures, such as strip farming, suitable cultural practices, methods of establishing grass cover, sources of seed, water development, tree planting, farm gardens and other measures suitable to local conditions.

3. Free supplies of forage crop seeds for the establishment of seed plots. The object of this phase of the work is to enable farmers to produce their own supplies of seed for pastures and for controlling drifting on sub-marginal land. Seed of grasses, legumes or corn, according to local conditions, is supplied through Associations to members in quantities sufficient to establish a small plot, usually from 2 to 5 acres.

4. Trees for home shelterbelts are supplied free to members to a maximum of 10,000 trees or cuttings per farm, the number supplied also depending on the condition of existing shelters, and the condition of land for planting. Free transportation is supplied for the nearest station. Financial assistance of $3.50 per 1,000 is also supplied for planting, but this assistance will not be provided after 1938.

5. Water Development. Applications for assistance in water development are relayed to the Water Development Committee.

6. Financial Assistance. Subject to certain conditions, grants are made to Associations for operating expenses to the extent of $50.00 per association comprising up to 100 members, plus 50 cents per member in excess of 100, to a maximum of $100.00 per association.

Progress with Associations

From the inauguration of the program in 1935, to the end of February, 1938, a total of 109 Associations were organized, with a membership of over 14,000. According to the 1931 Census of Canada there were 122,262 farms located in the area which comes under the Prairie Farm Rehabilitation Act. Assuming each member in the Agricultural Improvement Associations to represent one farm, the membership of the Agricultural Improvement Associations represents over eleven per cent of the farmers in the drought area.

The following data regarding Agricultural Improvement Associations' work during the fiscal year 1937-38, may be of interest.

Statistics Regarding Agricultural Improvement Associations during 1937-38

District	Number of A.I.A. March 1938	Number of members	Meetings held
Southwestern Manitoba	12	2,050	37
Southeastern Saskatchewan	17	2,319	19
Southwestern Saskatchewan	33	4,124	138
North-central Saskatchewan) and central Alberta)	27	3,599	43
Southern Alberta	20	1,923	75
Total	109	14,015	312

A complete list of Agricultural Improvement Associations, showing the headquarters, number of members, date of formation, and names of the principal officers, is shown in Appendix 3 of this report.

Activities of Agricultural Improvement Associations during 1937

The various activities of Agricultural Improvement Associations during 1937 are briefly outlined below by districts.

Southwestern Manitoba

P.F.R.A. Conference at Brandon - A conference of 23 delegates from the Agricultural Improvement Associations and 6 operators of District Experiment Sub-Stations, was held at Brandon, Man., on February 22, 23 and 24, 1938. This meeting was attended by members of the staff of the Dominion Experimental Farm, Brandon, and by Professor J.H. Ellis, and Mr. N.C. McKay. The rehabilitation and further improvement of agriculture in southwestern Manitoba was discussed in a comprehensive manner.

Grass Seed Production - During 1937 some 1112 members of Associations planted seed plots.

Production of Seed Corn - During 1937 a number of Agricultural Improvement Association members were provided with seed corn for one-acre plots. Good yields were secured, and to facilitate shelling of this crop, several corn shellers were supplied by the Brandon farm for the use of Agricultural Improvement Association members.

Southeastern Saskatchewan

Reclamation - A reclamation project was started in co-operation with farmers who are members of the Estevan Agricultural Improvement Association. This work has already been referred to above in the section on Reclamation.

Regrassing - Grass and other forage seed distributed to members of Associations in this district during the year, amounted to 18,550 pounds. Owing to dry weather conditions, regrassing met with very little success.

Southwestern Saskatchewan

Reclamation - During 1937 an extensive emergency program of soil drifting control was undertaken by the Swift Current station in co-operation with members of 12 Associations located at Lac Pelletier, Shaunavon, Gull Lake, Verlo, Hazlet, Pennant, Cabri, Hazenmore, Maple Creek, Robsart, Success and Gravelbourg. This work included the working of about 12,000 acres of badly drifted land with various methods and machines in co-operation with 60 farmers and involved 97 different experimental projects. The major portion of this work consisted of controlling drifting by emergency cultural practices. Some equipment and gasoline for farmers' tractors was supplied from the Dominion Experimental Station at Swift Current.

Experimental Grass Production - Seeding of forage crops has been done on a few farms of Agricultural Improvement Association members. Distribution of grass and legume seed through Associations amounted to 21,760 pounds. Crested wheat grass was supplied to members in 10-pound lots. In some cases borders of fields were seeded to brome for saw-fly control.

Contour Furrowing - A contour-furrowing project has been started in co-operation with the Shaunavon Agricultural Improvement Association.

Meetings - Every effort was made to enliven Agricultural Improvement Association meetings, household science demonstrations being provided for farm women, and musical entertainment being provided by local talent at many meetings. Considerable use was made of lantern slides and motion pictures to illustrate talks, particularly with reference to water development.

Bulletin Libraries - Efforts are being made to provide farmers with farm literature through bulletin libraries attached to the Associations.

North-Central Saskatchewan and Central Alberta

The chief interests of Agricultural Improvement Association members in this district would appear to lie in establishing grass cover of suitable areas, and in water development.

Grass Seed - Since October, 1936, 33,675 pounds of seed have been distributed to Agricultural Improvement Association members in this district, 26,920 pounds having been distributed in 1937. Crested wheat grass seed to the amount of 28,570 pounds has been distributed to 1,491 members. In spite of two very dry years many good stands have been obtained by following suggested methods of seeding where drought has not been too severe.

Live Stock - In the early part of 1937 the Neutral Hills, Black Hills, and Sounding Creek Agricultural Improvement Associations set up the Neutral Hills Live Stock Board. This board made listings of all the

marketable live stock in the district served by these Associations, for the benefit of buyers. Prior to the opening of the Carberry Scheme, the board was instrumental in securing improved prices for live stock shipped from the area.

Subdivision into Locals - The Neutral Hills and Sounding Creek Associations have been sub-divided into eight and four locals each respectively. Each local has its own executive and conducts some activities. This sub-division makes for more effective operation in Associations with widely scattered membership.

Southern Alberta

The chief interests of Associations in this district are soil drifting control, insect control, grass production, and water conservation.

Grass Production - During the past year 750 Associations seeded 3-acre seed plots of crested wheat grass, and 100 are prepared for seeding in the coming spring.

Soil Drifting Control - 24 sets of 3 listing shovels have been supplied to Associations for emergency use in soil drifting control. Approximately 5,000 acres of land were listed to check soil drifting.

Sawfly Control - The Grasswold Association was formed primarily to combat sawfly depredations by border strips of brome. This work is proceeding over the entire municipality of Greenwold.

TREE PLANTING

Tree planting, with the object of improving living conditions on prairie farms, and of providing protection for gardens and crops against the erosive and drying effects of high winds, is being undertaken as part of the rehabilitation program.

Afforestation on the naturally treeless prairies is beset with many difficulties arising principally from adverse climatic conditions, but also from the lack of suitable planting stock. In order to assist farmers in overcoming these difficulties in establishing desirable shelterbelts of trees and hedges, expert forestry advice and supplies of tree seedlings have been supplied free for a number of years from the Dominion Forest Nursery Stations of the Dominion Experimental Farms. These forest nursery stations are located at Indian Head, Sask., and Sutherland, Sask. This service has been provided at Indian Head since 1901 and at Sutherland since 1914. During the 37-year period from 1901 to 1937, over 153,000,000 tree seedlings and cuttings have been distributed from the same stations to between 60,000 and 65,000 farmers. Under the rehabilitation program this service is being extended to include the following activities:

1. District Experiment Sub-Stations - Special assistance being granted on these sub-stations for tree planting for demonstration purposes. During 1937 a total of 82,795 seedlings were supplied for this purpose.

2. Agricultural Improvement Associations - Members of these Associations may receive a limited number of trees delivered free to the nearest railway station, plus financial assistance of $3.50 per thousand for planting. During 1937 some 485 members of associations planted a total 584,890 seedlings. After 1938, the financial assistance for planting will be discontinued, to be replaced by the payment of express on all planting stock distributed in the drought area. In this manner assistance under the rehabilitation program as regards tree planting will be more widely distributed.

3. Field Crop Shelterbelt Associations - The work of these Associations represents a very interesting phase of the rehabilitation program. Field Crop Shelterbelt Associations comprise groups of farmers located on neighbouring farms who have undertaken with government assistance, to plant shelterbelts on their crop land, the belts being spaced to enclose from 20 to 80 acres. The object of this work is to determine whether a fairly extensive system of shelterbelts will exert a beneficial influence on crop production by modifying the intensity of adverse meteorological factors such as high winds, rapid evaporation and loss of snow cover. This work which is of a purely experimental nature, will require many years for the demonstration of results and is confined to a few selected areas. Members of these Associations receive the following assistance, subject to supervision from the Forest Nursery Stations: Trees delivered free to the nearest railway station, $3.50 per thousand for planting, and $20.00 per mile of shelterbelt for subsequent care during the currency of the Prairie Farm Rehabilitation Act.

Field Crop Shelterbelt Associations have been established at Lyleton, Man., Aneroid, Sask., Conquest, Sask., and at Porter Lake (Ribstone), Alta. The Conquest project was started in 1934 and brought under the rehabilitation program in 1935. The other projects were started in 1936.

At Conquest, some 143.7 miles of shelterbelt were planted during 1937, making a total of 233.7 miles since the initiation of the project. At Lyleton, Aneroid, and Porter Lake there have been 72.3, 13, and 12.2 miles respectively of shelterbelt planted, mostly in 1937. By the end of 1938 it is estimated that there will be 156 miles of shelterbelt at Lyleton, 26 miles at Aneroid, 325 miles at Conquest and 23 miles at Porter Lake.

In addition to the work described above, some assistance has been given to a municipal tree-planting project at Kindersley, Sask.

The progress made in rehabilitation tree-planting since 1935 is indicated by the number of seedlings supplied, as shown in the following table. As a matter of record the number of trees supplied to farmers through the ordinary free distribution is also shown.

Tree-Planting Work under the Prairie Farm Rehabilitation Act, 1935 to 1937 inclusive.

Project	Number of trees supplied		
	1935 and 1936	1937	Total 1935-1937
District Experiment Sub-Stations	77,730	94,470	172,200
Agricultural Improvement Associations	229,380	584,890	814,270
Field Crop Shelterbelt Associations	---	---	---
Lyleton, Man.	4,000	376,025	380,025
Aneroid, Sask.	30,150	70,105	100,255
Conquest, Sask.	471,350	994,400	1,465,750
Porter Lake, Alta.	24,805	50,180	74,985
Kindersley (Sask.) Municipal Project	102,525	---	102,525
Reclamation Projects	20,525	12,025	32,550
Total for rehabilitation	960,465	2,182,095	3,142,560
Ordinary free distribution (other than P.F.R.A.)	12,789,249	5,875,580	18,664,560
Total distribution in Prairie Provinces	13,749,714	8,057,675	21,807,389

Altogether, there are 1990 farm locations on which tree-planting under the rehabilitation program has been undertaken.

RESEARCH

In addition to the experimental work which accompanies all phases of the rehabilitation program, a considerable amount of fundamental research work is in progress. While the dividing line between experimental work and fundamental research cannot be rigidly defined, it is convenient to group under the latter such activities requiring laboratory facilities as soil survey and soil research.

Soil Survey

With the object of making an inventory of soil resources in the Prairie Provinces, the nature, location, and extent of the various soil types is being determined through soil surveys. This work has been in progress for a number of years, in many cases as a co-operative project between the provincial agricultural colleges and the Dominion Experimental Farms. Under the rehabilitation program efforts are being made to complete this work for the entire drought area, in order to supply data for agricultural, land utilization and resettlement purposes.

In general, the procedure being followed in this work is to make a reconnaissance survey of the entire drought area, in which soils are mapped on a fairly broad classification. The reconnaissance survey is followed by more detailed surveys of areas presenting special problems, especially where irrigation is contemplated or reclamation is necessary.

Soil Survey in Manitoba - During the past year 2,142,720 acres were covered in the reconnaissance soil survey of southern Manitoba. The total area covered to date is 7,211,520 acres located in the south-western part of the province from the Saskatchewan boundary to the Red river valley. Reports and maps of this survey, which covers the drought area in Manitoba, is in course of preparation.

Soil Survey in Saskatchewan - Detailed soil surveys were conducted during the past year of six municipalities in the Mortlach - Chaplin - Gravelbourg area, approximately 1,000,000 acres being covered. In this survey information on soil erosion, topography, stoniness, etc., was obtained, in addition to data on soil types. As the six municipalities concerned had previously been covered by farm management studies by the University of Saskatchewan, the additional information on soils should enable specific recommendations to be made regarding the use and disposition of the lands involved. In addition, detailed Surveys covering a total of 43,850 acres, were made on several areas on which irrigation developments are in progress.

Previous soil survey work in Saskatchewan included a reconnaissance survey of the province as far north as Prince Albert, some 64,000,000 acres being covered. The report and maps for this survey were published in 1936, Soil Survey Report No. 10, by the provincial agricultural college at Saskatoon, with assistance from the Dominion Experimental Farms. During 1936 additional reconnaissance work was done in the area north of Prince Albert, and detailed surveys were made of severely drifted areas around Mortlach and Cadillac as well as on the new irrigation projects at Val Marie and Eastend.

Soil Survey in Alberta - The reconnaissance soil survey of the drought area in this province was continued during 1937 in the Sullivan Lake and Pincher Creek districts, over 3,000,000 acres being covered. Altogether, some 15,600,000 acres in the drought area of Alberta have been surveyed, leaving approximately 10,000,000 acres yet to be covered.

Soil Research

Soil research under the rehabilitation program includes a comprehensive group of investigations into problems affecting dry-land crop production in progress at the Soil Research Laboratory, Dominion Experimental Station, Swift Current, Sask., and co-operative investigations into specific soils problems at each of thethree provincial universities.

Work of the Soil Research Laboratory, Swift Current, Sask. - The following outline of activities during 1937 at this laboratory, which was opened in 1936, will indicate the nature of the work being done.

Soil Moisture Investigations - Experiments to determine the moisture requirements of various crops under different cropping and cultural practices, which had been in progress on the experimental station since 1922, were continued with some revisions and additions. A bulletin embodying the results of these experiments entitled "Soil Moisture and Crop Production under Dry Land Conditions in Western Canada", was published in January, 1938.

Studies were also continued on the effect of shelterbelts and snow fences in trapping snow to increase soil moisture supplies.

Soil Drifting Studies - To determine the susceptibility to drifting of various soils under different cropping and cultural practices, a portable wind tunnel was constructed and given preliminary trials. With this tunnel, wind velocities up to 22 miles per hour can be produced on the soil surface wherever desired, and the effect thereof determined under field conditions. This equipment, together with a larger stationary wind tunnel now under construction, will enable much more comprehensive studies to be made of soil drifting control measures than would be possible under natural conditions.

Soil Fertility Experiments - The effect of wind erosion on soil fertility, and various related problems are under investigation both in the greenhouse and in field areas. Because of extremely dry weather during 1937, however, many of the results of this work were inconclusive.

Wind Studies - The effect of shelterbelts, crop strips, and cultural practices in reducing the erosive and evaporative power of wind was determined under a wide range of conditions with batteries of anemometers and evaporimeters. Appreciable reductions in wind velocity and evaporation from the soil were observed for as much as 200 feet to the lee side of shelterbelts. Crop strips in strip farming areas reduced wind velocity from 1 to 3 miles per hour. Rough cultivation had a similar effect on the velocity of wind over fallow land. The results of these investigations will eventually be useful in determining the relative efficiency of various measures of soil drifting control.

Analytical Work - In addition to original research, a large amount of routine analytical work was done for various rehabilitation and experimental farm workers. This included dry matter determinations on some 3,800 samples of fodder, and moisture determinations on some 3,000 samples of soil. Many chemical analyses of soil and water were also made.

Special Soil Research at the Provincial Universities - Investigations on three important soil problems are being conducted in co-operation with the soils department at each of the three provincial universities in the Prairie Provinces. By means of this co-operative arrangement use is made of the facilities of these institutions for the investigation of pressing soil problems, without having any duplication of effort between them or with the Soil Research Laboratory at Swift Current.

The problems being investigated by each of the provinces and the progress that was made during the past year is briefly discussed below.

Manitoba - "The Quality and Composition of Crops as Influenced by Soil Type, Fertilizer Treatment, Crop Sequence, and Climatic conditions".

This investigation has been confined to the analysis of crops grown on Red River clay during the past five years. The analyses show that seasonal conditions have a greater effect on the quality of crops than any other factor, as judged from the protein content. In any one season, however, manure and a preceding crop of legume has significantly increased the protein content of wheat. Small amounts of commercial fertilizers have not significantly affected the composition of grain crops.

Saskatchewan - "The Nature and Treatment of Alkali Soils".
The "alkali" or saline soil problem of Western Canada is a very important one, as many soils carry a sufficient content of soluble salts to be injurious to plant growth. The presence of these salts is manifested by delayed maturity of the cereal crops, particularly wheat, a reduction of yield and sometimes by a complete failure of the crops. While some scattered investigations have been made of the problem previously, the assistance granted to this province is such that an extensive investigation is possible for the first time.

In connection with this work, a number of field experiments were undertaken in 1937. Unfortunately, all these experiments failed owing to drought.

Alberta - "Soil Deterioration Studies".
The purpose of these studies is to determine the losses caused by cultivation and grain growing upon different types of soil. In this work analyses are made of the total nitrogen, organic matter, rate of nitrification, total phosphorus, easily soluble phosphorus, and total potash of cultivated and virgin soils.

The following general conclusions were drawn from the analyses made during 1937.

1. Grain growing has often caused rather large losses of nitrogen and organic matter. However, nitrification studies show that the older cultivated soils are still capable of producing about as much readily available nitrogen as the original soils.

2. The losses and changes in total phosphorus and potassium are within the range of sampling and analytical errors.

3. So far, no significant differences have been found in the quantities of easily soluble phosphorus in cultivated and uncultivated soils.

LAND UTILIZATION

During the period of agricultural settlement in the Prairie Provinces, some areas of sub-marginal land were broken for crop production. Some of this land was subsequently abandoned, but a considerable acreage is still nominally under cultivation with little prospect of producing profitable crops. To remove such lands from cultivation and to prevent their resettlement by farmers during future periods of favourable precipitation and high grain prices, is the main object of the land utilization phase of the rehabilitation program. It is further proposed that these sub-marginal areas shall be used largely for grazing purposes, under definite range and live stock improvement policies. In this work the co-operation of the provincial and municipal

authorities is being secured. The most important development of this work so far has been the establishment of community pastures as described below.

Developments in land utilization work is based on the experience gained by the Dominion Experimental Farms over a long period of years, and on various types of surveys. The latter include the soil surveys (referred to on page 17 of this report), economic research, land ownership investigations, and aerial photographic surveys.

Economic Research

The objects of these surveys, which are conducted as part of the rehabilitation program by the Economics Branch of the Dominion Department of Agriculture, are to classify land for future use and to secure information with respect to farm organization and practices for guidance in the agricultural reorganization of dry areas. This basis of this work is the actual experience of farmers in the areas surveyed.

Economic surveys are in progress in the drought areas of Alberta and Saskatchewan. In Alberta this work may properly be defined as "Land Utilization Research" while in Saskatchewan it takes the form of "Land Use Classification". The significance of these terms will be made clear in the following account of the work done in 1937.

Land Utilization Research in Alberta

The first two months of the fiscal year 1937-38 were spent in completing an analysis of data collected in the Sounding Creek Special Area during the summer of 1936. A report has now been prepared on Land Classification in this area.

The new work undertaken consisted of a study of land utilization in two special areas, as follows:

Areas Covered

Two special areas were covered in the 1937 land utilization survey in Alberta, viz., the Neutral Hills Special Area and the Sullivan Lake Special Area. The former includes five old municipal units, viz., I.D. #331, Stewart #302, Wiste #303, I.D. #332 and I.D. #333. The latter includes four old municipal units, viz., Hiram #304, Richdale #274, Hand Hills #275 and Dowling Lake #305. In addition to this area, townships 36 and 37 ranges 1, 2 and 3 were also included in the survey since there were indications that these townships would be included in the Neutral Hills Special Area.

Type of Data

In gathering the material in the 1937 survey as well as in the 1936 survey, two factors were kept in mind:

1. To obtain information which is essential in establishing land classification for future land use and,

2. To obtain information with respect to farm organization and practices which would presumably serve as a guide in the re-organization of the dry areas in the Prairie Provinces after the land was classified.

To meet the above two requirements, every resident farmer within these two special areas was interviewed in order to get a complete picture of the existing conditions as well as the obtaining of information on which to base land classification. In all, 1,749 farmers were interviewed who gave complete statements.

In addition, information was obtained from the municipal offices on 12,672 parcels of land with respect to ownership, assessed acreage and value, and total tax indebtedness of each parcel. Information was also obtained as to what parcels had passed through recent tax sales. Maps were prepared showing the location and quality of all buildings in the 88 townships surveyed.

Special studies were made in order to establish a key which is to be used in connection with the interpretation of photographs (See Aerial Photographic Survey below).

It is believed that the information which has been obtained in the 1937 study and which is in the process of being organized and tabulated will prove useful in (1) classifying the land for future use within the areas being covered this year and (2) providing information which will serve as a guide in farm reorganization.

Land Use Classification in Saskatchewan

The classification of Saskatchewan lands according to their probable best use for the future began in 1935 as a joint Dominion and Provincial project by the Economics Branch of the Dominion Department of Agriculture and the Farm Management Department of the University of Saskatchewan and has been continued throughout 1937.

A provisional map showing the classification of the land areas in the seven rural municipalities covered by the economic survey of 1936 and a preliminary report to accompany this was prepared last May. Areas were set out in five land classes according to their suitability for wheat production. Thirty-two per cent of the total area of the seven rural municipalities was classified as unsuitable for wheat production and designated as grazing. Twenty-five per cent of the land was classified as marginal for wheat - areas where a combination of wheat and fairly extensive live stock enterprises would seem to be the probable best use for the land. The remaining 43 per cent of the total area has been classified as fair, good and excellent wheat land.

In the economic survey of 1937, twelve rural municipalities and one local improvement district were covered. Observations on all parcels of land were made as to physical characteristics, e.g., soil, topography, stoniness, amount arable and vegetation. Information on these parcels was obtained concerning ownership, assessed values, and tax delinquency. Where the parcel of land was vacant or abandoned, information concerning the year first occupied, number of occupants and year of vacating was also obtained. Information was tabulated concerning all occupied farms as to extent of holding, tenure, size and condition of buildings. In addition to the foregoing, detailed information was obtained on history of yields of wheat for the period of 1921 to 1936 inclusive, history of occupancy and period of cultivation, kinds and numbers of live stock, watering facilities and farming practices. As in Alberta, preliminary work was done in utilizing aerial photographs to facilitate survey work.

The analysis of the data assembled during the summer and fall months is well advanced. It is anticipated that land classes will be set out in the municipalities covered in 1937 on a similar basis to that used for the area covered in 1936. This analysis with that which has preceded it since commencing the project will permit the classification of land for the immediate future, according to its probable best use, of 27 municipalities in south-central Saskatchewan.

Land Ownership Investigations

The object of this work which was started in 1937, is to determine, on the basis of production over a period of years, the best use of land on sub-marginal areas. In these investigations various factors, such as soil type, indebtedness, and past production, are taken into consideration as affecting the possible disposition of sub-marginal areas. These investigations differ from the economic surveys in that they are confined to selected areas of sub-marginal land, whereas the economic surveys are conducted over all types of land.

During 1937 land ownership surveys in Saskatchewan covered the Rural Municipalities of Coalfields No. 4, Estevan No. 5, Bigstick No. 141, Dundurn No. 314, and Mariposa No. 350. In addition, some 71 townships were covered in the Frenchman River and Cypress Lake Area, about 16 townships in the Matador Ranch area, and 9 townships in the Webb-Cabri area. The total area covered is roughly 3,000,000 acres. Surveys in progress or contemplated will cover an additional 4,500,000 acres.

Aerial Photographic Surveys

During 1937 aerial photographic surveys were made of some 28,300 square miles of territory in the drought area. The object of this work was to supplement information obtainable from topographic maps regarding topography, farm and building locations, and badly drifted areas. These surveys were made by the Royal Canadian Air Force for the Bureau of Geology and Topography of the Federal Department of Mines and Resources. Part of the cost was met from rehabilitation funds.

The information secured from the photographic surveys has been made available to various federal and provincial officials engaged in rehabilitation work. Several important advantages have been secured. For land utilization purposes the aerial photographic survey gives information on the amount of land under cultivation, buildings, and the location of severely drifted areas which could not be otherwise obtained without a very considerable amount of land surveying. Similarly, for water development, important data on the course of streams, extent of watersheds, and topographic features affecting conservation work are secured.

The areas covered by the aerial survey in 1937 included the following:

1. Frenchman and Souris River areas, Saskatchewan and Manitoba, 4180 square miles.
2. Area north of Red Deer, Alberta, 4032 square miles.
3. Wood River district, Saskatchewan, 2352 square miles.
4. Youngetown district, Alberta, 5832 square miles.
5. Area southwest of Regina, Sask., 11,800 square miles.
6. Saskatchewan River Valley, Medicine Hat to Saskatoon.

Altogether, some 12,800 aerial photographs were taken in this work.

Community Pastures

A practical result of the foregoing survey work is the establishment on sub-marginal areas of community pastures. The purpose of these pastures is to utilize certain areas of sub-marginal land, which have been largely abandoned by farmers, for the purpose of providing grazing for live stock. Areas selected for this purpose are fenced, provided with stockwatering facilities and where necessary, regrassed. The few remaining farmers are moved to better class land in the neighbourhood. When the pastures are established, grazing rights thereon are granted to stock-raisers in the immediate vicinity. Stock-raisers using a pasture are formed into a Grazing Association, which conducts its business through an elected council of five members. This council decides the number of stock which each member of the Association may place on the pasture, and co-operates with a federally-appointed pasture manager in the operation of the pasture. The total carrying capacity of each pasture is decided by the federal Government.

By the end of 1937, Community Pastures had been established on 16 sub-marginal areas in Saskatchewan comprising a total of 175,900 acres, and with a total potential carrying capacity of from 6280 to 7100 head of live stock. Details of these pastures are presented in the following table, the name of each pasture indicating the Rural municipality in which it is located.

Community Pastures Established in Saskatchewan by December 31, 1937

Name of Pasture	Acres in Pasture	Potential Carrying Capacity	Headquarters of Pasture
Coalfields	6,500	200	Bienfait
Estevan-Cambria	6,400	180-200	Hitchcock
Laurier	24,960	1200	Radville
The Gap No. 1	5,440	200	Hardy
The Gap No. 2	6,720	250-300	Hardy
Brokenshell No.1	20,480	1000-1200	Yellow Grass
Brokenshell No.2	8,160	100	Clearfield
Excel No. 1	6,880	300	Ormiston
Excel No. 2	10,560	200	Ormiston
Rudy	7,360	150-200	Wingello
Usborne	12,160	800	Venn
Dundurn	20,800	600-800	Dundurn
Montrose	11,680	300-400	Donavon
Mariposa No. 1	7,320	150-200	Kerrobert
Mariposa No. 2	14,720	350-500	Kerrobert
Park	5,760	400	Langham
Totals	175,900	6280-7100	

In addition to the foregoing, the establishment of community pastures on 31 areas, totalling 327,810 acres in Saskatchewan, and of 8 areas, totalling 595,840 acres in Alberta is under consideration.

Reserve Pastures - Another development in land utilization under the P.F.R.A. is the proposed establishment of reserve pastures on certain large areas which have been partly abandoned by farmers. One object of this phase of the program would be to provide protected areas of grass land for use in periods of drought. Another object would be to present undesirable agricultural resettlement in good season. Three such areas totalling 3,064,320 acres have been tentatively selected in southwestern Saskatchewan, for range improvement in connection with irrigation developments in the Cypress Hills district.

WATER DEVELOPMENT

The development of water for agricultural use is a major activity under the rehabilitation program, and one which has already resulted in substantial benefits to farmers and ranchers in the drought area. The object of this work is to provide for the storage, by means of dugouts or dams, of spring run-off water for domestic, stock-watering, and irrigation purposes in districts where the normal summer supply is inadequate for the optimum utilization of crop or grazing land.

This work is conducted under the supervision of a Water Development Committee for each province, consisting of three Dominion officials who sit on all three committees, and one provincial official for each individual committee. Prior to 1936 one Water Development Committee served all three provinces.

Two types of projects are provided for; small projects for individuals, and large projects for communities. Free engineering assistance is provided for the construction of small projects, in addition to financial assistance in proportion to the size of the projects. Assistance for large projects is decided for each case on its merits, usually amounting to the full cost of construction. The guiding principle in the selection of large projects is the maximum of benefit to farmers at a minimum cost. Practically all of the irrigation projects are designed to stabilize the stock-raising industry, by providing dependable supplies of forage.

Financial Assistance for Small Projects - The basic rates of financial assistance for small projects are as follows:

Type of Project	Financial Assistance	Maximum Assistance
Dugouts	4½¢ per cubic yard of earth removed.	$ 75.00
Stockwatering dams	As for dugouts, plus 25¢ per cubic yard of rock removed, plus cost of materials.	150.00
Irrigation Projects	As for stockwatering dams.	350.00
Neighbour Projects	Where two or more individuals can combine in constructing a project, and where no transfer of land is necessary, the maximum assistance is	500.00 per project.

In September, 1937, the rate of financial assistance was temporarily increased for small projects located in the areas coming under the current Feed and Fodder and Direct Relief Agreements between the provinces of Saskatchewan and Alberta and the Dominion Government. In these areas the rate for projects constructed between September, 1937, and the end of 1937 was set at 8 cents per cubic yard of earth removed, while the maxima for dugouts and stockwatering dams were increased to $125.00 and $250.00 respectively. This action was taken to enable farmers who were without feed or financial resources, due to severe drought, to proceed with construction.

Progress in the Construction of Small Water Development Projects

The number of applications received for assistance with small projects, and the progress made in their construction, is shown in the following table.

From the Inauguration of the Program in 1935 to March 15, 1938.

Province	Applications Received				Projects reported completed			
	Dug-outs	Stock-watering dams	Irrigation Projects	Total	Dug-outs	Stock-watering dams	Irrigation Projects	Total
Manitoba	1,661	230	20	1,911	1,180	75	2	1,257
Saskatchewan	3,221	2,981	1,145	7,347	1,283	1,091	248	2,622
Alberta	484	1,345	704	2,533	157	425	127	709
Total	5,366	4,556	1,869	11,791	2,620	1,591	377	4,588

The irrigable area represented by the 377 small irrigation projects which have been completed is approximately 12,000 acres.

Progress in the Construction of Large Community Projects

Large projects constructed or under construction since the inauguration of the rehabilitation program include 61 storage dams for stockwatering or domestic purposes, and 20 irrigation projects. The total irrigable land in these large projects is approximately 56,000 acres in Saskatchewan, and 43,700 acres in Alberta. Irrigation development in Manitoba is negligible. In addition, some 12,000 acres have been made irrigable by small projects. Altogether, rehabilitation projects constructed or under construction represent 112,000 acres of irrigable land. More exact data will be available as the program develops.

The progress made in the construction of water development projects to March 31, 1938, is set out in the summary presented below. Some of the data presented on irrigable acreages, capacity of reservoirs, and the cost of construction are subject to revision, especially as regards projects recently completed or still in progress.

SUMMARY OF LARGE AND COMMUNITY WATER DEVELOPMENT PROJECTS UNDER THE PRAIRIE FARM REHABILITATION ACT

From the Inauguration of the Program to January 24, 1938.

Project	Type of Project	Irrigable area	Storage capacity	Cost of Const.
		acres	ac. ft.	$
Souris Dam, Souris, Man.	Old dam on Souris River for stockwatering and domestic purposes reconstructed in 1935.	-	150	3,840.00
Crystal City Dam. Crystal City, Man.	Stockwatering dam constructed on tributary to River. Completed in 1935.	-	3	3,400.00
R.M. of Edward, Man.	Construction of 4 stockwatering dams on tributaries to Souris River. Completed in 1935.	-	100	10,214.03
Souris River Stock-water Supply, near Melita, Man.	Storage of water in the Souris River by means of 2 dams; one located on SW 8-4-26-W1, and one on NE 33-2-27-W1. Completed in 1937.	-	-	10,227.44
Carberry Pasture, Carberry, Man.	Development of 9 wells and 5 springs, with pumps and storage tanks for supply of water for cattle.	-	-	2,180.00
Val Marie Irrigation Project, Val Marie, Sask.	Storage dam and canals for the irrigation of river flats on the Frenchman River. Completed in 1936.	4500	8450	131,992.59
Eastend Irrigation Project, Sask.	Storage dam and canals for the irrigation of river flats on the Frenchman River. Completed in 1936.	1400	1300	77,368.00
Adams Lake Storage Dam, Sask.	Storage dam located at headwaters of Battle Creek in SW 14-8-29-W3 for stockwatering and irrigation. Completed in 1936.	1500	2000	8,442.00
Downie Lake Storage Dam, Sask.	Storage dam in Tp. 9-28-W3 to provide for stockwatering and the irrigation of land along Maple Creek. In progress.	5868	5000	52,000.00

Project	Type of Project	Irrigable area	Storage capacity	Cost of Const.
		acres	ac. ft.	$
Cypress Lake Storage Project, Sask.	Construction of dams at the east and west ends of Cypress Lake to raise level of lake about 14 feet. When completed, this reservoir will provide water for irrigation and stockwatering use along the Frenchman River, Battle Creek, and Maple Creek. Supplementary supplies will be made available for the Val Marie, Eastend, Adams Lake, and Downie Lake projects mentioned above, and for the Eastend Extension and Richardson projects mentioned below, as well as for a number of other areas. Started in 1937.	20000	70000	300,000.00
Eastend Extension Project, Sask.	Extension of canals from Eastend project to irrigate land further down the Frenchman River Valley. Proposed. Subject to Cypress Lake Development.	1100	-	25,000.00
Richardson Project, Sask.	Rehabilitation of old irrigation works in 11-5-27-W3. Proposed. Subject to Cypress Lake Development.	2000	-	9,000.00
Middle Creek Storage Dam, Sask.	Dam located in NE 21-5-30-W3 for stockwatering and irrigation along Middle Creek. Completed in 1936.	10000	20000	15,590.51
Coderre Dam, Coderre, Sask.	Dam on Wood River for storage of stockwatering supplies. Completed in 1937.	-	773	7,729.82
Dunn & Watt Project, McEachern, Sask.	Flood irrigation scheme with diversion structure along McEachern Creek in Tp. 1-8-W3. Completed in 1937.	305	-	2,995.56
Dead Lake Storage, Midale, Sask.	Storage dam on the Souris River in 8-4-11-W2 for the irrigation of river flats above Estevan, Sask. Completed in 1937.	3500	3500	14,615.98
Roughbark Creek Dam.	Dam on Roughbark Creek, tributary to the Souris River. Supplementary to Dead Lake Project. Completed in 1937.	-	15000	9,314.93
Long Creek Stockwatering Dams, Near Estevan, Sask.	Two stockwatering dams on Long Creek. Completed in 1936. Dam 1. NW 10-2-8-W2 Dam 2. SW 15-1-8-W2	- -	137 90	8,729.62 8,701.46

Project	Type of Project	Irrigable area acres	Storage capacity ac. ft.	Cost of Const. $
Lajord Reclamation Project, Sask.	Reclamation of 13,000 acres of spring flooded land by straightening parts of Waskana Creek near Lajord. Completed in 1936.	--	--	13,800.00
Moose Mountain Lake Storage Project.	Dam in 9-11-8-W2 to provide storage for stockwatering and irrigation along Moose Mountain Creek. Completed in 1937.	6000	8000	10,153.01
Davidson Storage Project, Davidson, Sask.	Stockwatering and irrigation dam. Completed in 1937.	100	277	3,113.67
Kenaston Dam, Sask.	Stockwatering dam in 32-29-28-W2. Completed in 1937.	-	350	1,896.28
Lac Pelletier Dam	Stockwatering dam in 24-12-15-W3, near Swift Current. Completed in 1937.	-	3350	2,139.08
Girvin Dam, Sask.	Stockwatering dam in 21-25-28-W2. Completed in 1937.	-	20	2,180.13
Weyburn Dam, Sask.	Stockwatering dam in 20-8-14-W2 near Weyburn.	-	2700	3,314.42
Small Community Projects in Saskatchewan.	24 small projects were completely or nearly finished by December 31, 1937. In cost these projects ranged from $110 to $1000, the average cost per project being about $515.	-	-	-
Wild Horse Storage Project, Alberta.	Dam in 23-2-3-W4 for storage of water from Sage Creek. Constructed in 1936. Repaired 1937.	3600	4500	24,379.78
Canada Land and Irrigation Company, Vauxhall, Alta.	Rehabilitation of this project, involving repairs to dam on Bow River near Carseland, Alberta, and to 110 miles of main canal. Completed in 1936.	45000 (near Vauxhall)	-	80,000.00 (P.F.R.A. share)

Project	Type of Project	Irrigable area	Storage capacity	Cost of Const.
		acres	ac. ft.	$
Eastern Irrigation District (Formerly C.P.R. Eastern,) Brooks, Alberta.	Financial assistance given from P.F.R.A. funds for repairs and extension of services. In 1935 a contribution of $15,000 was made for the construction of the Sutherland Dam (Total cost to District $21,777.87). Capacity of dam 18000 acre-feet, serving from 8,000 to 10,000 acres of new irrigation. A contribution of $7,500 was also made for the construction of the Cowoki Reservoir, with a capacity of 14,000 acre-feet, for the irrigation of some 2280 acres. The total cost of the Cowoki Reservoir was about $30,000. In 1937 preparations were made to develop from 25,000 to 50,000 acres of new irrigation in the Rolling Hills district (Tps. 14 and 15, Rges. 12, 13 and 14-W4).	-	-	62,500.00
Mountain View Irrigation District, Alta.	Assistance provided under the P.F.R.A. for construction of canals to irrigate land in Tps. 2 and 3, Ranges 27 and 28-W4 (southwest of Blood Indian Reserve). Water secured from Belly River. Completed in 1936.	4200	-	3,000.00
Bartman Dam, East Berry Creek, Alta.	Storage dam in 3-25-11-4W for stockwatering and irrigation. In progress. Constructed for Special Municipal Areas Board of Alberta.	700	3000	25,000.00
Special Municipal Areas of Alberta.	During 1936 11 community water storage projects were constructed for use in the Special Municipal Areas of Alberta, the average cost per project being slightly over $880. During 1937 a program of similar proportions was in progress. Final details, however, are not yet available as to the progress made.	-	-	-

PRAIRIE FARM REHABILITATION ACT
EXPENDITURES BY ACTIVITIES - 1935-36, 1936-37, & 1937-38, to APRIL 30,1938

Activity	1935-36	1936-37	1937-38 to Apr.30,1938	Total
District Exp.Sub-Stations	70,524.51	73,787.77	111,973.76	256,286.04
Reclamation Stations	14,719.55	40,022.48	63,905.89	118,647.92
Grass Seed Development	48,066.34	10,361.71	21,086.02	79,514.07
Tree Planting	18,602.79	31,092.05	40,516.78	90,211.62
Soil Research Laboratory	7,632.62	24,005.64	23,371.46	55,009.72
Soil Survey	12,842.69	34,424.52	43,368.85	90,636.06
Agr.Improvement Assns.	1,156.43	4,011.62	31,243.98	36,412.03
Economic Survey	5,832.40	10,988.39	24,801.25	41,622.04
Hydrometric Survey	7,483.31	3,301.76	-	10,785.07
Administration	31,681.50	22,917.58	35,123.72	89,722.80
Water Development, Small Projects & Administration	123,881.87	237,704.19	527,820.11	889,406.17
Large Scale Regrassing	-	1,351.04	15,228.26	16,579.30
Reserve for Purchase of Seed	-	29,210.86	-	29,210.86
Distribution of Pure Seed Grain	-	38,745.60	109,530.91	148,276.51
Agricultural Extension Work	-	18,825.94	4,416.62	23,242.56
Cooperative Soil Research	-	4,597.27	3,117.02	7,714.29
Publications	-	4,420.13	-	4,420.13
Moving Settlers	-	5,378.31	-	5,378.31
Land Ownership Investigations	-	5,859.19	62,579.77	68,438.96
Feed Relief Administration	-	39,007.94	137,414.68	176,422.62
Soil Moisture Conservation	-	-	14,109.74	14,109.74
Aerial Survey	-	-	7,892.53	7,892.53
Entomological Survey	-	-	3,308.75	3,308.75
Community Pastures	-	-	248,744.21	248,744.21
Purchase of Sheep & Beef Cattle	-	-	13,979.74	13,979.74
Land Purchases	-	-	122,706.81	122,706.81
Large Projects	-	-	165,436.01	165,436.01
Total P.F.R.A.	342,424.01	640,013.99	1,831,676.87	2,814,114.87
Total Western Conservation Works	69,118.78	319,804.79	-	388,923.57
Total Rehabilitation Program	411,542.79	959,818.78	1,831,676.87	3,203,038.44

PRAIRIE FARM REHABILITATION ACT 1937-38

FINAL STATEMENT OF EXPENDITURE BY PROVINCES FOR THE FISCAL YEAR ENDING MARCH 31st, 1938 - VOTE 296

Vote	Primary	Activity	Appropriation	General	Manitoba	Saskatchewan	Alberta	Total	Unexpended Balance
		Cultural							
296	A-1	District Experiment Sub-Stations	115,000.00	1,338.45	10,715.79	78,344.95	21,575.57	111,973.76	3,026.24
	2	Reclamation Stations	65,000.00	-	8,014.40	35,481.43	20,410.06	63,905.89	1,094.11
	3	Large Scale Grass Seeding	17,000.00	-	19.61	14,918.28	290.37	15,228.26	1,771.74
	4	Grass Development Investigations	22,000.00	8,599.73	767.58	11,718.71	-	21,086.02	913.98
	5	Tree Planting	41,000.00	-	4,125.74	35,063.60	1,327.44	40,516.78	483.22
	6	Soils Laboratory Investigations	25,000.00	-	-	23,371.46	-	23,371.46	1,628.54
	7	Soil Survey	44,000.00	5,428.11	10,459.35	15,636.79	11,844.60	43,368.85	631.15
	8	Co-operative Soil Research	4,000.00	-	295.43	1,087.74	1,733.85	3,117.02	882.98
	9	Large Scale Soil Moisture Conserv.	15,000.00	-	-	14,109.74	-	14,109.74	890.26
	10	Re-establishing Pure Seed Grain Centres	115,000.00	-	14,440.85	69,756.25	25,333.81	109,530.91	5,469.09
	11	Agricultural Extension Work	5,000.00	-	-	4,416.62	-	4,416.62	583.38
	12	Agricultural Improvement Assoc.'s	32,000.00	-	3,714.27	22,645.41	4,884.30	31,243.98	756.02
	13	Publication of Experimental Data	2,000.00	-	-	-	-	-	2,000.00
	14	Economic Survey	25,000.00	-	-	12,656.87	12,144.38	24,801.25	198.75
	15	Administration	36,000.00	31,248.70	33.15	3,476.77	365.10	35,123.72	876.28
	16	Aerial Survey	8,000.00	7,892.53	-	-	-	7,892.53	107.47
	17	Entomological Survey	4,000.00	-	505.35	1,626.52	1,176.88	3,308.75	691.25
		Total	575,000.00	54,507.52	53,091.52	344,311.14	101,085.36	552,995.54	22,004.46
		Land Utilization							
	B-1	Community Pastures	300,000.00	157.75	9,894.38	237,001.06	1,691.02	248,744.21	51,255.79
	2	Sheep & Beef Cattle Policies	20,000.00	-	-	13,727.31	252.43	13,979.74	6,020.26
	3	Land Utilization (General)	75,000.00	187.28	38.09	62,354.40	-	62,579.77	12,420.23
	4	Feed Relief	150,000.00	2,241.03	2,014.45	109,401.68	23,757.52	137,414.68	12,585.32
	5	Land Purchase	130,000.00	-	-	110,206.81	12,500.00	122,706.81	7,293.19
		Total	675,000.00	2,586.06	11,946.92	532,716.51	38,200.97	585,425.21	89,574.79
		Water Development							
	C-1	Small Water Development Proj.'s	530,000.00	-	55,284.52	394,488.14	78,047.45	527,820.11	2,179.89
	2	Completion of Existing Large Proj.	20,000.00	-	-	17,551.88	423.85	17,975.73	2,024.27
	3	Large Water Development Proj.'s	200,000.00	-	10,227.44	109,867.61	27,365.23	147,460.28	52,539.72
		Total	750,000.00	-	65,511.96	521,907.63	105,836.53	[illegible]	56,743.88
		GRAND TOTAL	2,000,000.00	57,093.58	130,550.40	1,398,910.03	245,122.86	[illegible]	168,323.13

PRAIRIE FARM REHABILITATION ACT - VOTE 296

FINAL STATEMENT OF EXPENDITURE BY SUB-ALLOTMENTS FOR THE FISCAL YEAR 1937-38, ENDING MARCH 31st, 1938.

Vote	Primary	3	6	7	9A	9B	11	12A	12B	13	14	Total
		Cultural										
296	A-1	9,668.72	321.62	774.80	37,917.94	7,054.15	33,761.50	14,536.23	13.75	1,074.49	6,850.56	111,973.76
	2	23,214.69	3,137.81	1,632.33	-	19,015.60	1,146.25	7,575.62	66.85	1,790.31	6,326.43	63,905.89
	3	5,737.66	237.09	175.11	-	2,269.55	11.14	4,702.32	-	378.64	1,716.75	15,228.26
	4	2,677.96	93.08	122.05	5,369.90	7,872.03	-	2,965.37	-	145.10	1,840.53	21,086.02
	5	1,565.77	14,189.72	2,211.56	4,833.33	9,901.48	220.00	2,693.34	671.47	1,627.89	2,602.22	40,516.78
	6	3,143.49	1,318.45	233.67	9,587.01	7,300.37	-	1,184.96	-	415.87	187.64	23,371.46
	7	888.70	-	-	17,078.10	15,635.21	-	952.46	-	3.23	8,811.15	43,368.85
	8	60.14	-	31.16	-	2,177.20	-	220.06	-	-	628.46	3,117.02
	9	6,541.54	964.20	63.35	-	3,704.51	-	1,985.47	-	20.54	830.13	14,109.74
	10	-	-	-	-	-	-	92,189.40	-	17,341.51	-	109,530.91
	11	-	-	-	2,283.30	-	-	-	-	-	2,133.32	4,416.62
	12	7,238.59	155.70	7,895.91	-	1,707.91	12.00	4,638.48	-	808.01	8,787.38	31,243.98
	13	-	-	-	-	-	-	-	-	-	-	-
	14	2,827.80	-	1,199.48	14,502.29	-	7.50	507.23	-	28.17	5,728.78	24,801.25
	15	253.77	-	19,107.09	8,271.71	-	-	3,222.85	-	13.38	4,254.92	35,123.72
	16	-	-	48.90	-	3,024.75	-	3,770.85	-	173.73	874.30	7,892.53
	17	1,016.02	-	-	-	-	-	741.92	-	-	1,550.81	3,308.75
Total		64,834.85	20,417.67	33,495.41	99,843.58	79,662.76	35,158.39	141,886.56	752.07	23,820.87	53,123.38	552,995.54
		Land Utilization										
	B-1	46,986.88	705.67	487.36	748.43	96,614.05	-	86,524.46	-	3,643.38	13,033.98	248,744.21
	2	12,992.93	-	-	-	-	-	-	-	295.78	691.03	13,979.74
	3	6,069.21	-	995.19	25,784.12	2,975.75	1,004.23	536.40	-	146.18	25,068.69	62,579.77
	4	28.80	-	2,843.29	81,070.57	1,231.00	379.19	266.87	-	75.63	51,519.33	137,414.68
	5	-	122,706.81	-	-	-	-	-	-	-	-	122,706.81
Total		66,077.82	123,412.48	4,325.84	107,603.12	100,820.80	1,383.42	87,327.73	-	4,160.97	90,313.03	585,425.21
		Water Development										
	C-1	21,570.75	230,323.79	9,260.46	154,895.18	24,672.96	3,880.51	4,926.01	23.00	1,788.73	76,478.72	527,820.11
	2	-	17,975.73	-	-	-	-	-	-	-	-	17,975.73
	3	-	147,460.28	-	-	-	-	-	-	-	-	147,460.28
Total		21,570.75	395,759.80	9,260.46	154,895.18	24,672.96	3,880.51	4,926.01	23.00	1,788.73	76,478.72	693,256.12
GRAND TOTAL		152,483.42	539,589.95	47,081.71	362,341.88	205,156.52	40,422.32	234,140.30	775.07	29,770.57	219,915.13	1,831,676.87

Appendix 2

TOTAL LAND AREA, AREA OCCUPIED, AREA CULTIVATED, FARM POPULATION, AND NUMBER OF FARMS IN THE PRAIRIE PROVINCES & IN THE P.F.R.A. AREA
Based on the 1931 Census of Canada

	MANITOBA	SASKATCHEWAN	ALBERTA	PRAIRIE PROVINCES
Total Land area, acres.	140,622,720	152,304,000	159,232,000	452,158,720
Approximate area under P.F.R.A., acres.	6,500,000	52,000,000	30,000,000	88,500,000
Percentage of total land area under P.F.R.A.	3.6	34.1	18.8	19.6
Total Area of occupied land, acres.	15,131,685	55,673,460	38,977,457	109,782,602
Occupied land under P.F.R.A., acres.	5,592,074	39,405,665	21,225,671	66,223,410
Percentage occupied land under P.F.R.A.	37.0	70.8	54.5	60.3
Total area of cultivated land, acres.	8,521,930	33,548,988	17,748,518	59,819,436
Cultivated land under P.F.R.A., acres.	3,811,821	25,673,172	9,915,571	39,400,564
Percentage	44.7	76.5	55.9	65.9
Total Farm population - number.	254,302	564,012	370,899	1,189,213
Farm population under P.F.R.A.	69,723	341,065	125,797	536,585
Percentage farm population under P.F.R.A.	27.4	60.5	33.9	45.1
Total number of farms.	54,199	136,472	97,408	288,079
Farms under P.F.R.A.	15,252	73,265	33,745	122,262
Percentage of farms under P.F.R.A.	28.1	53.7	34.6	42.4

APPENDIX 3

DETAILS OF AGRICULTURAL IMPROVEMENT ASSOCIATIONS UNDER THE PRAIRIE FARM REHABILITATION ACT
March 31st, 1938

Agricultural Improvement Associations in Manitoba

Name of Association	Headquarters	When Formed	No. of Members
Boissevain	Boissevain	1937	169
Crystal City	Crystal City	1937	250
Deloraine	Deloraine	1937	69
Goodlands	Goodlands	1935	102
Hartney	Hartney	1938	138
Killarney	Killarney	1937	215
Lyleton	Lyleton	1935	109
Melita-Arthur	Melita	1937	60
North Brenda	Medora	1935	140
Pierson & Dist.	Pierson	1935	144
Sifton-Pipestone-Albert	Reston	1935	577
Waskada	Waskada	1937	77

Agricultural Improvement Associations in Southeastern Saskatchewan

Alameda	Alameda	1937	74
Craik	Craik	1937	75
Colfax	Colfax	1937	50
Ceylon	Ceylon	1936	175
Estevan	Estevan	1935	603
Kenaston	Kenaston	1936	70
Kisbey-Arcola			110
Lake Alma	Lake Alma	1937	58
Minton	Minton	1936	175
Radville	Radville	1938	50
Scout Lake	Scout Lake	1937	80
Souris Valley	Oungre, Sask.	1937	118
Trossachs	Trossachs	1937	130
Weyburn	Weyburn	1936	211
Midale	Midale	1938	200
Crane Valley	Crane Valley	1938	55
Assiniboia	Assiniboia	1938	75

Agricultural Improvement Associations in Southwestern Saskatchewan

Aneroid	Aneroid	1935	101
Cabri	Cabri	1937	212
Chambery	Chambery	1937	69
Chaplin	Chaplin	1935	214
Climax & Dist.	Climax	1937	66
Coulee	Burnham	1937	138
Frontier	Frontier	1937	102
Gravelbourg	Gravelbourg	1937	233
Gull Lake	Gull Lake	1935	76
Hazenmore	Hazenmore	1935	96
Hazlett	Hazlett	1937	95
Herbert	Herbert	1935	161
Horsham	Horsham	1937	88
Kincaid	Kincaid	1935	66
Lac Pelletier	Lac Pelletier	1937	50
La Fleche	La Fleche	1935	242
Limerick	Limerick	1935	51
Maple Creek	Maple Creek	1935	309
Mazenod	Mazenod	1937	236
Meyronne	Meyronne	1935	96
Mortlach	Mortlach	1935	109
Pennant	Pennant	1937	79

(A.I.A.'s in S.W.Sask.cont'd)

Robsart	Robsart	1937	131
Senate	Senate	1937	53
Shaunavon	Shaunavon	1934	263
Sidewood	Sidewood	1935	42
Success	Success	1937	139
Tompkins	Tompkins	1937	135
Tugaske	Tugaske	1935	58
Valor	Valor	1935	75
Vanguard	Vanguard	1937	203
Verlo	Verlo	1936	80
Waldeck	Waldeck	1937	56

Agricultural Improvement Association in Central Saskatchewan and Central Alberta

Battle River	Rosyth, Sask.	1937 x	
Beechy	Beechy, Sask.	1935	79
Black Hills	Cousins, Alta.	1937	96
Bushville	Springwater, Sask.	1937 x	
Cando	Cando, Sask.	1937	191
Cavell	Cavell, Sask.	1937	154
Eagle Hills	Battleford, Sask.	1937	194
Eastern Alberta	Hayter, Alta.	1937	175
Eye Hill	Primate, Sask.	1937	242
Glenside	Baljennie, Sask.	1937	124
Harwell	Flaxcombe, Sask.	1937	68
Hillsborough	Brock, Sask.	1937 x	
Kindersley	Kindersley, Sask.	1937	109
Langham	Langham, Sask.	1937	137
Lucky Lake	Lucky Lake, Sask.	1935	106
Macrorie	Macrorie, Sask.	1935	147
Mantario	Eyre, Sask.	1937	90
Metiskow	Metiskow, Alta.	1937	150
Newcombe	Glidden, Sask.	1937	62
Neutral Hills	Consort, Alta.	1936	330
Parkdale	Hoosier, Sask.	1937	65
Royal Canadian	La Porte, Sask.	1937	114
South Edgerton	Edgerton, Alta.	1937	74
Sounding Creek	Sedalia, Alta.	1937	216
Senlac	Senlac, Sask.	1937	200
Unity	Unity, Sask.	1937	214
Wilkie	Wilkie, Sask.	1937	262

x - Membership lists not completed

Agricultural Improvement Associations in Southern Alberta

Acadia Valley	Acadia Valley		57
Argyle-Clear Lake	Claresholm	1936	75
Bindloss	Bindloss	1937	80
Cereal	Cereal	1937	146
Craigmyle	Craigmyle	1937	60
Delia	Delia	1937	84
Enchant	Enchant	1937	50
Garden Plains	Scapa	1937	89
Grasswold	Rockyford	1937	136
Hanna	Hanna	1937	236
Lomond	Lomond	1937	61
Macleod	Macleod	1937	213
Marquis	Hilo	1937	143
Orkney	Ghost Pine Creek	1937	25
Oyen	Oyen	1937	100
Pincher Creek	Pincher Creek	1937	121
Retlaw	Retlaw	1937	64
Rose Lynn	Rose Lynn	1937	92
Sibbald	Sibbald	1937	53
Youngstown	Youngstown	1937	38

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1937/38

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